Whirlpool

Service Manual

Washing machine
Frontloader
AWO 1200 EX

Model AWO 1200 EX
Version 8592 077 22000

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Family	SC1

Global White

This documentation is only intended for qualified technicians who are aware of the respective safety regulations.

Date: 07.09.2004
Document-No.: 4812 722 23082

Subject to modification

Technical data

Dimensions

Height	85	cm
Width	59.5	cm
Depth	60	cm

Weight

Without packing	73	kg

Main Connection

Voltage	230	V
Frequency	50	Hz
Power consumption	2.3	kW
Fuse rating	10	A

Drum

Volume	48	l
Wash spin	54	rpm
Ramp spin	95	rpm
Speed spinning max.	1200	rpm

Capacity of dry laundry

Cotton/coloured	5	kg
Cotton rapid	3	kg
Cotton short	5	kg
Easy care	2.5	kg
Easy care rapid	1.5	kg
Easy care short	2.5	kg
Delicate	1.5	kg
Wool	1	kg

Water Level

Level 1		
Switching point	55 ± 5	mmWc
Switching back point	35 ± 5	mmWc
Overflow	280 ± 20	mmWc

Water level inside the drum

(only switching level inside the drum)

Level 1	25 - 39	mm
Overflow	267 - 306	mm

Nominal currents

Contacts		
11 - 12	4 (4)	A
11 - 14	16 (4)	A
11 - 16	1 (1)	A
Contact system		
11 - 12 - 14	spring contact	
11 - 16	sliding contact	
Damping system	no	

Door lock

Lock time (20 °C)	3" - 6"	
Unlock time	60" - 90"	
Nominal voltage	230	V
Nominal current:		
Contact 4 - 5	16 (4)	A

Heating element

Kind of heating	Tubular heating element with NTC - sensor	
Nominal Voltage	230	V
Nominal power	2050	W
resistance R25	22 - 28	Ω
Resistance NTC:		
0 °C	35.9	kΩ
30 °C	9.8	kΩ
40 °C	6.6	kΩ
50 °C	4.6	kΩ
60 °C	3.2	kΩ
70 °C	2.3	kΩ
95 °C	1.1	kΩ

Inlet valve

Water temperature max.	60	°C
Rated flow <1 bar	8	l/min
Pressure range	0.5 - 10	bar
Nominal voltage	220 - 240	V
Frequency	50	Hz
Starting voltage:		
<6 bar	160	V
6 - 10 bar	170	V
Nominal current	35	mA
Nominal power	6	VA
Nominal (20 °C)	3.4 - 4.5	kΩ

Switch aquastop

Nominal voltage	230	V
Nominal current	3 (1)	mA
Switch energy	<15	cN

Technical data

Drain pump (synchronous)

Nominal Voltage	230	V
Nominal current	0.3	A
Nominal power	34	W
Frequency	50	Hz
Resistor (coil)	155	Ω ± 7%
Motor protection	170	°C
Capacity (1.25m height)	14 ± 2	l/min

Program timer

Type	SC1	
Timer basic	4619 710 67646	
Timer programmed	4619 744 80431	
Nominal voltage	230	V
Frequency	50	Hz
Positions	32	

Connector

OA4.1 - OA4.2	5. Option
OA4.3 - OA4.4	6. Option
OB4.1 - OB4.2	3. Option
OB4.3 - OB4.4	4. Option
OC4.1 - OC4.2	1. Option
OC4.3 - OC4.4	2. Option
SLT3.1 - SLT3.3	Temp.selector
SLS4.1 - SLS4.4	Spin speed selector
VCF3.1 - VCF3.3	Valve (cold water)
VHF3.1 - VHF3.3	Valve (hot water)
Pi5.1 =	negative supply
Pi5.2 =	data
Pi5.3 =	clock
Pi5.4 =	positive supply
Pi 5.5 =	negative supply
PL3.1 - PL3.3	Pilot lamp

Connector

M7.1 - M7.7	Motor
DP2.1 - DP2.2	Pump
AQS2.1 - AQS2.2	Aquastopswitch
SET2.1 - SET2.2	NTC
DSS3.1 - DSS3.3	Door switch
PR2.1 - PR2.2	Pressostat

Single connector

HE2.1 - HE2.2	Heating element
PS2.1 - PS2.2	Pressostat
SM3.2 - SM3.3	mains switch (3 fold connector)

Ambient temperature	up to 70	°C
Storage temperature	up to 85	°C

Spin speed

Wash speed	54	rpm
Ramp speed	95	rpm
Spin speed	1200	rpm

Resistence (at the selector)

1160 rpm	4.7	kΩ
960 rpm	3.6	kΩ
780 rpm	2.7	kΩ
580 rpm	1.8	kΩ
440 rpm	1.1	kΩ
95 rpm	0.68	kΩ
0	0	

Without resistor on push button switch

released	1160	rpm
pushed	580	rpm

Output

Motor	M7.6 - DSS3.2	>40 V
Aquastop	AQ2.2 - DSS3.2	230 V
in pump step	AQ2.1 - DSS3.2	230 V
NTC	not measurable	
Pump	DP2.1 - DP2.2	230 V
Doorlock	DSS3.1 - DSS3.3	230 V
Pressostat	E4 - E2	230 V
- empty	PR2.1 - E2	230 V
- full	PR2.2 - E2	230 V
Valve (Rast 2.5)	V2.1 - V2.2	>170 V
Options	not measurable	
Display module	Pi5.1 - Pi5.4	5 V
	Pi5.4 - Pi5.5	12 V

Motor

Type	MCA 52/64 - 148 t.f./ WHE 0	
Belt ratio	i = 1:13.3	
Resistance contacts		
6 - 7	68.7	Ω ± 7%
4 - 5	2.15	Ω ± 7%
5 - 6	1.46	Ω ± 7%
5 - 7	0.65	Ω ± 7%

Radio interference supression

Type	ISKRA - KPB 7325	
Nominal voltage	230	V
Nominal capacity	250 nFX1 + 2x22 nFY2 ± 20%	
Derivation current	≥4.15 mA (2x2.075 mA) at 250V 50Hz	
Nominal resistance	1	MΩ ± 5%

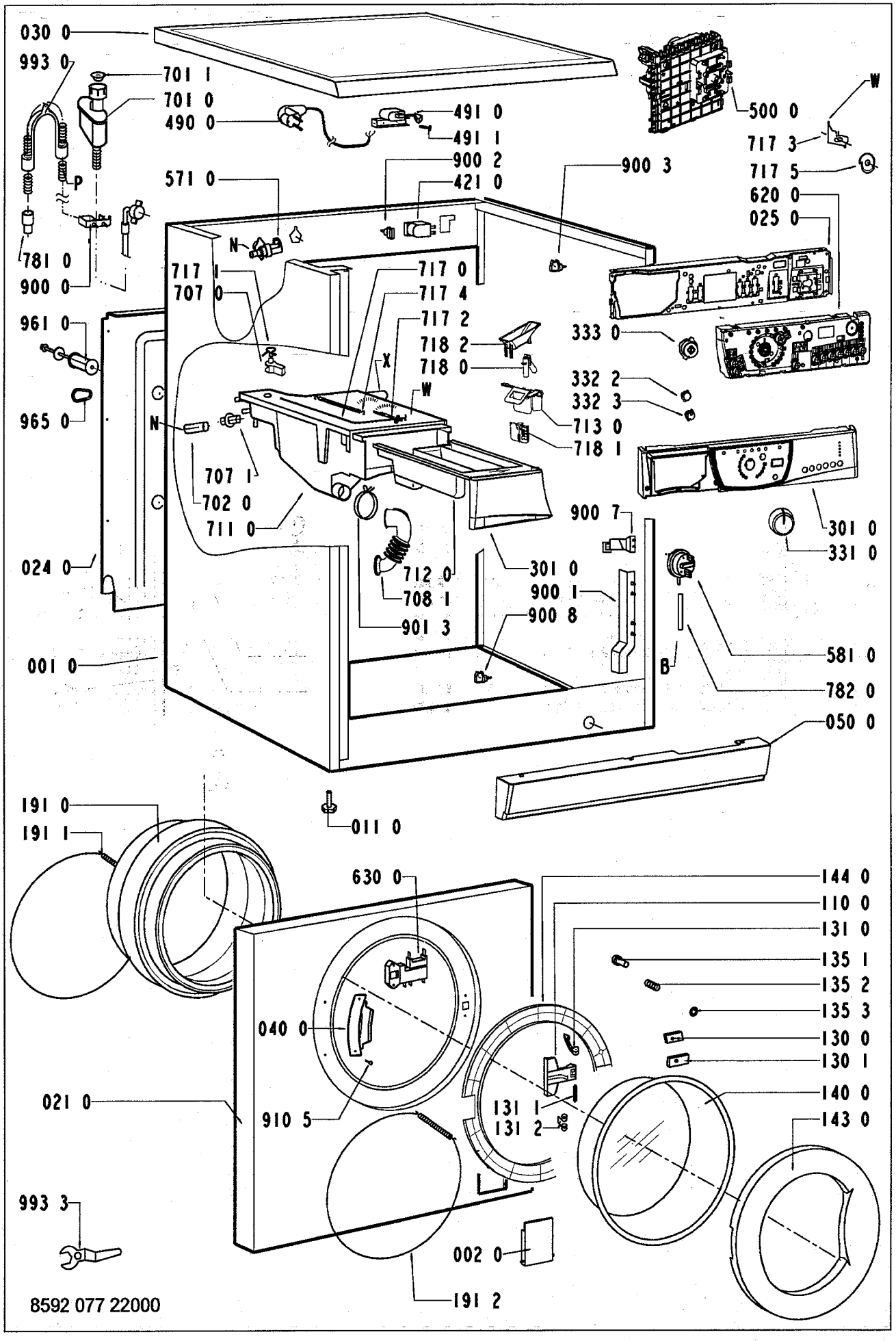
Spare part list

Model AWO 1200 EX
Service No. 859207722000
Version 859207722000

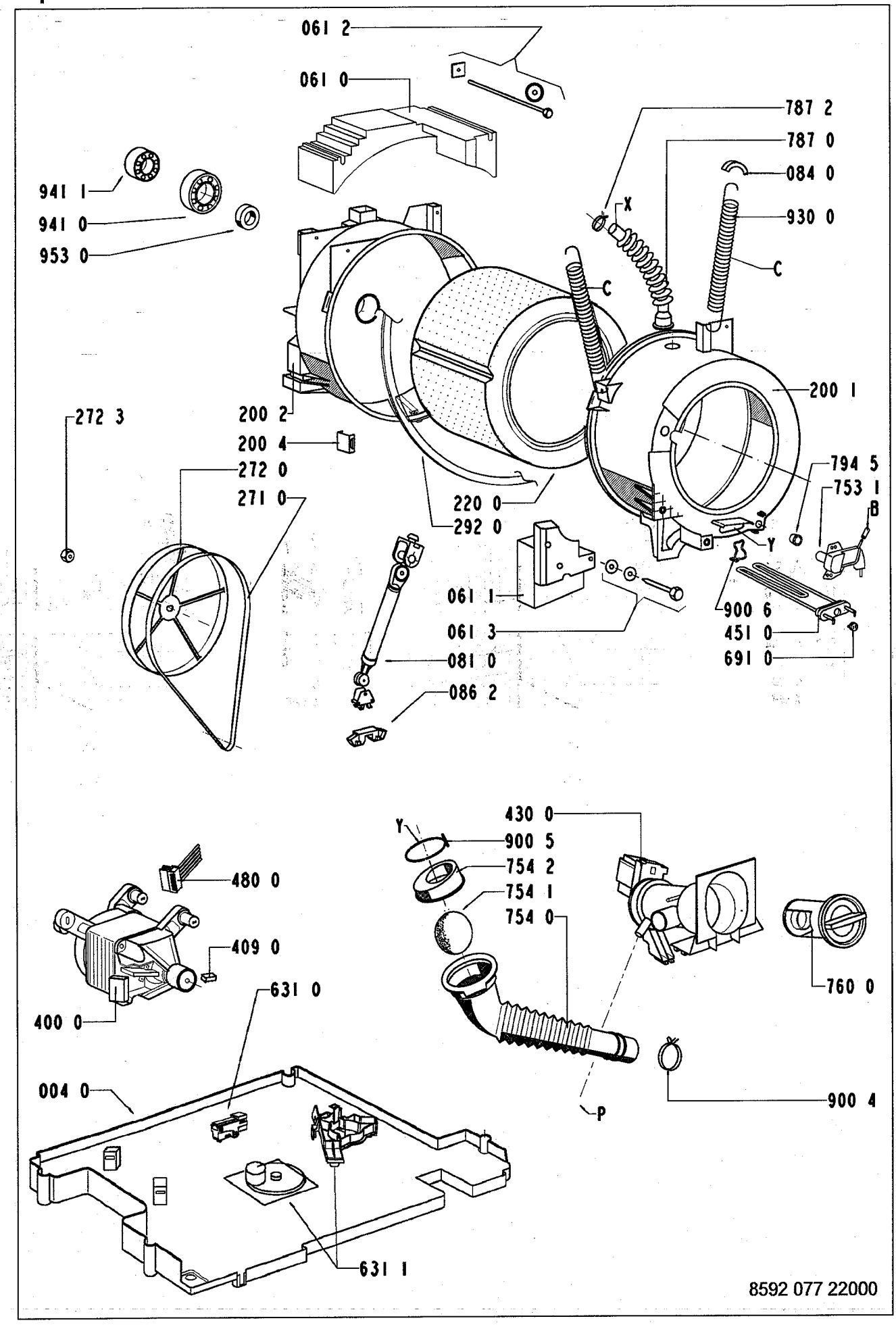
Pos. No.	12NC Code	Description
001 0	**4812 440 10784**	Cabinet GW
002 0	**4812 440 11131**	Flap square EBL
004 0	**4812 440 18993**	Drip tray assy
011 0	**4812 462 48421**	Adjust. foot
021 0	**4812 440 11132**	Front square Flap EBL
024 0	**4812 440 18998**	Panel, rear
025 0	**4812 404 38737**	Support EBL
030 0	**4812 440 11129**	Table top EBL
040 0	**4812 417 18787**	Hinge
050 0	**4812 440 89097**	Plinth EBL
061 0	**4812 466 88458**	Counter weight upper
061 1	**4812 466 88607**	Counter weight front
061 2	**4819 310 39227**	Mounting kit Weight top
061 3	**4819 310 39228**	Mounting kit Weight bottom
081 0	**4812 529 18038**	Shock absorber until 1200
084 0	**4812 466 58001**	Silent block
086 2	**4812 401 18412**	Stopper
110 0	**4812 498 18361**	Handle, door
130 0	**4812 417 28047**	Plate Door lock
130 1	**4812 417 28048**	Plate Door lock Lower
131 0	**4812 417 28046**	Lock Door
131 1	**4812 417 28045**	Pin Door Lock
131 2	**4812 492 58022**	Spring Door Lock
135 1	**4812 498 18262**	Knob Door safety GW
135 2	**4812 492 58023**	Spring Door Safety
135 3	**4812 290 68153**	Holder, adjust. Door Safety
140 0	**4812 450 58981**	Door glass
143 0	**4812 440 11141**	Glass door frame
144 0	**4812 440 11139**	Frame, door glas
191 0	**4812 466 68729**	Door bellow BK 48 l
191 1	**4812 492 18017**	Strap
191 2	**4819 530 58059**	Ring
200 1	**4812 418 18369**	Tub, half front 48l
200 2	**4812 418 18318**	Tub 48l rear
200 4	**4812 290 88054**	Clamp for tub
220 0	**4812 418 18191**	Drum 1200 0,5MM PP 48L
271 0	**4812 358 18056**	V-ribbed belt WH 1250 J5
272 0	**4812 528 58027**	Pulley DIAM. 298
272 3	**4812 505 18371**	Nut M 12
292 0	**4812 530 58101**	Gasket Tub
301 0	**4812 452 14857**	Control panel + handle drawer
331 0	**4812 414 58263**	Knob, timer EBL
332 2	**4812 513 18146**	Push button without LED EBL
332 3	**4812 513 18145**	Push button with LED EBL
333 0	**4812 513 18143**	Push button Start EBL
400 0	**4812 361 58376**	Motor MCA52WHE0
409 0	**4812 362 48004**	Brush, carbon motor CESET
421 0	**4812 121 18142**	Interf. filter 1,00 µ F
430 0	**4812 310 28144**	Pump, draining KIT
451 0	**4812 259 28835**	Heating element 2050W,230V + NTC
480 0	**4812 321 78109**	Cable Motor SC1/OM PP/ALPHA/GA
490 0	**4819 321 18136**	Cable, mains 2m SA
491 0	**4812 321 28367**	Strain relief
491 1	**4812 502 38152**	Screw 4.8x19
500 0	**4812 282 18827**	Timer SC1 (EI,PW,IR,RH)

Pos. No.	12NC Code	Description
571 0	**4812 271 28375**	Valve, magnet Single
581 0	**4812 271 28441**	Pressostat
620 0	**4812 239 58024**	Module Timer "B" C/DS
630 0	**4812 280 58044**	Door lock
631 0	**4812 271 38358**	Switch MICRO
631 1	**4812 360 58112**	Floater Kit BK,WH
691 0	**4812 282 18702**	Sensor NTC (SC1,OMEGA,ACCESS)
701 0	**4812 530 28781**	Hose, inlet 3.8 m (Eltek)
701 0	**4819 530 28926**	Hose, inlet 2.5 m (Eltek)
701 1	**4819 466 69704**	Gasket and filter
702 0	**4819 530 29019**	Hose intern
707 0	**4812 526 48031**	Nozzle Distribution
707 1	**4812 526 48028**	Nozzle
708 1	**4812 530 48143**	Bend
711 0	**4812 418 68321**	Dispenser 3 C. EBL
712 0	**4812 418 68319**	Drawer 3 C. cpl. EBL
713 0	**4812 418 89042**	Flap drawer 3 C. EBL
717 0	**4819 321 28092**	Bowden cable
717 1	**4812 321 38013**	Lever, Nozzle
717 2	**4812 321 38012**	Holder, adjust.
717 3	**4812 278 88018**	Slide
717 4	**4812 492 38359**	Spring, Nozzle
717 5	**4812 282 18807**	Cam 3 C. SC1/VBL/WH
718 0	**4812 526 48051**	Siphon
718 1	**4812 418 89041**	Separator 3 C. EBL
718 2	**4812 418 89043**	Grille drawer 3 C. EBL
753 1	**4819 418 68234**	Chamber, air
754 0	**4812 530 28826**	Drain hose
754 1	**4812 530 28832**	Lock eco
754 2	**4812 530 28829**	Flange eco
760 0	**4812 480 58105**	Filter set pump
781 0	**4812 530 29342**	Hose, draining
782 0	**4812 530 28827**	Hose Pressostat
787 0	**4812 530 28813**	Steam hose
787 2	**4819 401 18868**	Clamp, hose 26.8 mm
794 5	**4812 530 58098**	Gasket Airtrap
900 0	**4812 255 18204**	Holder Hose outlet
900 1	**4812 290 88086**	Bracket
900 2	**4812 290 88077**	Cable clamp
900 3	**4812 401 18446**	Cable clamp
900 4	**4812 401 18549**	Clamp, hose
900 5	**4819 401 18529**	Clamp, hose
900 6	**4812 401 18444**	Support Heating element
900 7	**4812 256 98031**	Holder pressostat
900 8	**4819 401 18823**	Clamp
901 3	**4812 401 18414**	Clamp, hose
910 5	**4812 502 18516**	Screw 4,2 x 13
930 0	**4819 492 38139**	Spring Suspension
941 0	**4812 520 28004**	Bearing, ball 6206
941 1	**4812 520 28066**	Bearing, ball 6204
953 0	**4812 530 58099**	Shaft seal 1200
961 0	**4819 532 68829**	Spacer
965 0	**4812 466 68545**	Cover BK/WH
993 0	**4812 530 29341**	Bow
993 3	**4812 395 58004**	Tool

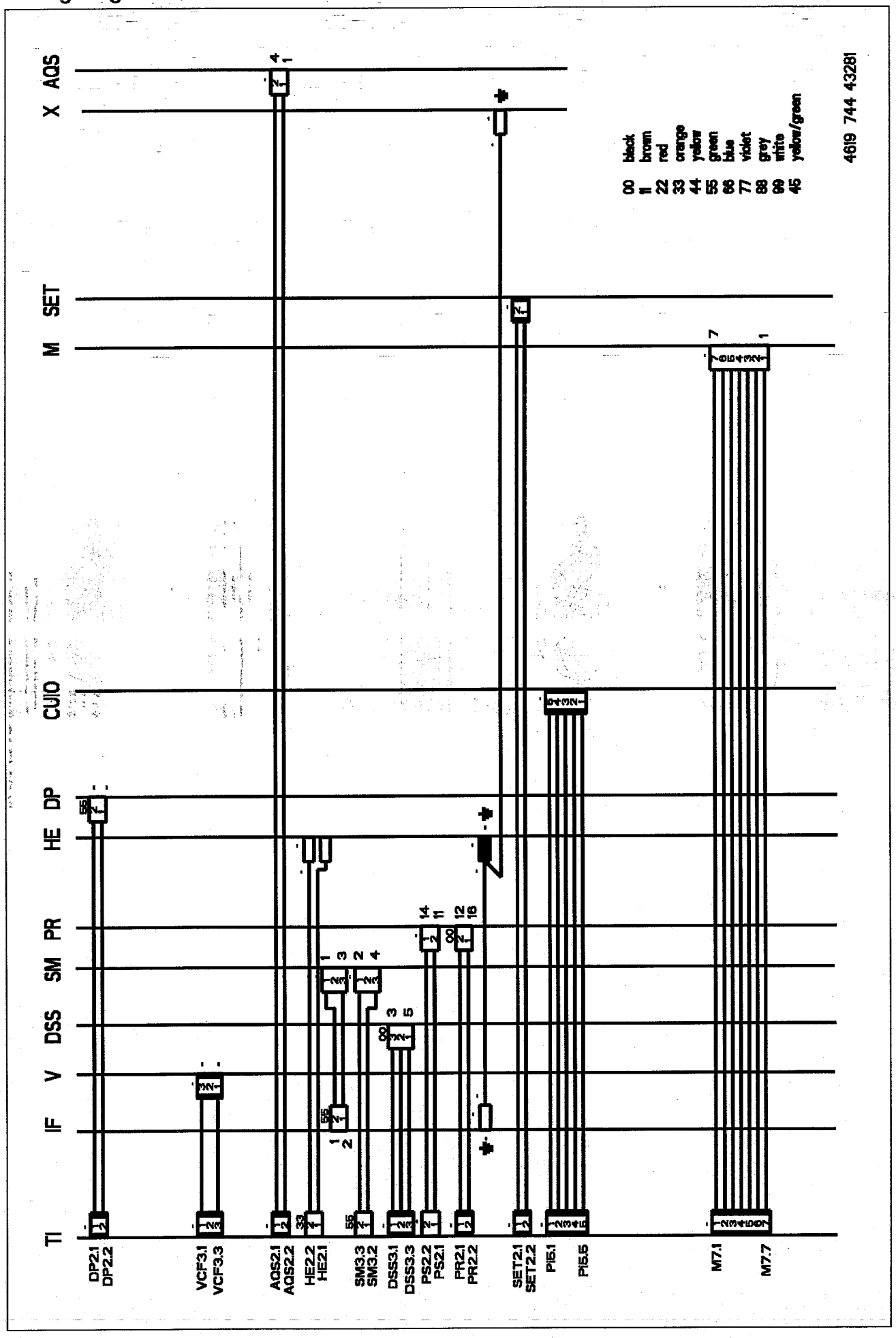
Exploded view



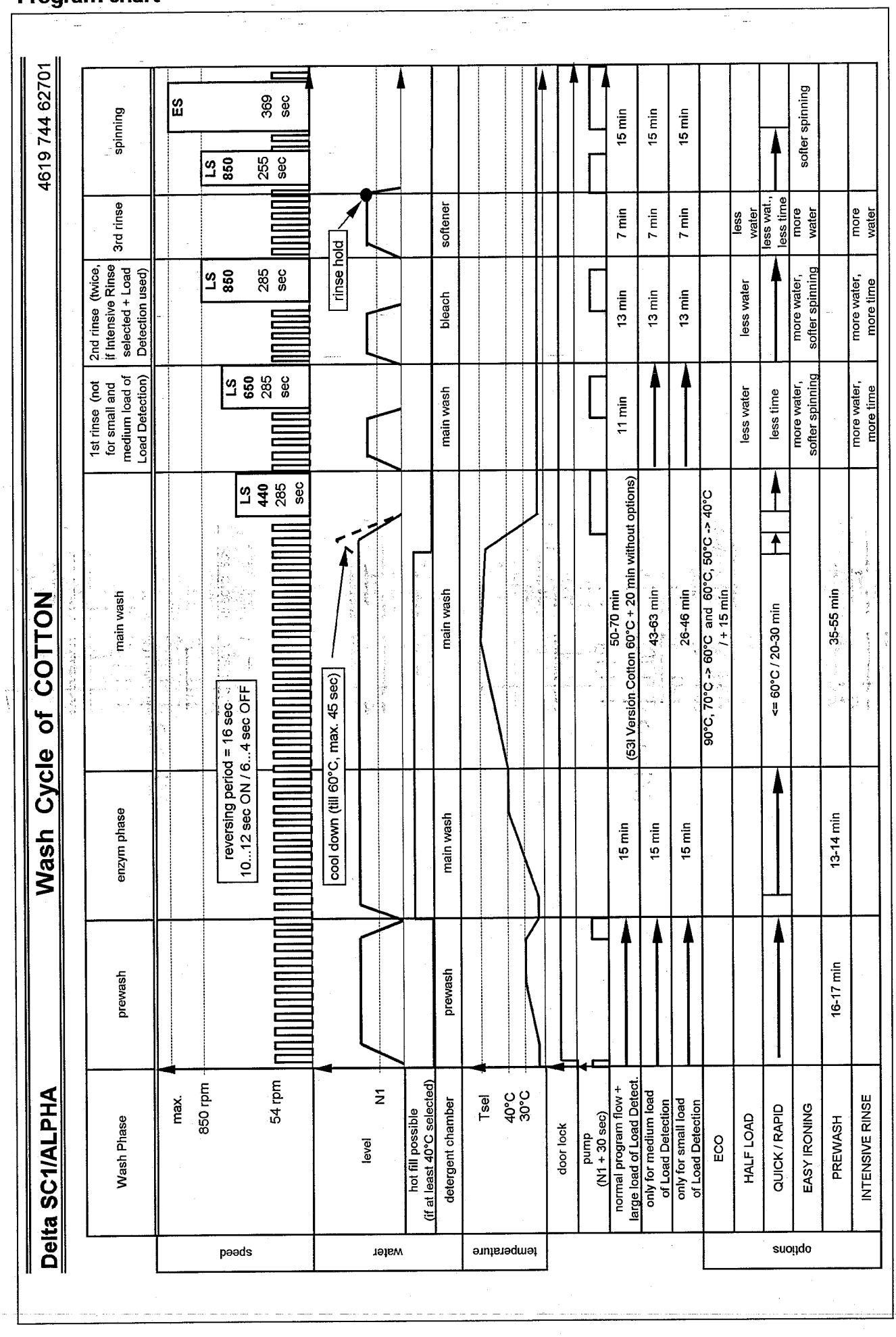
Exploded view



Wiring diagram

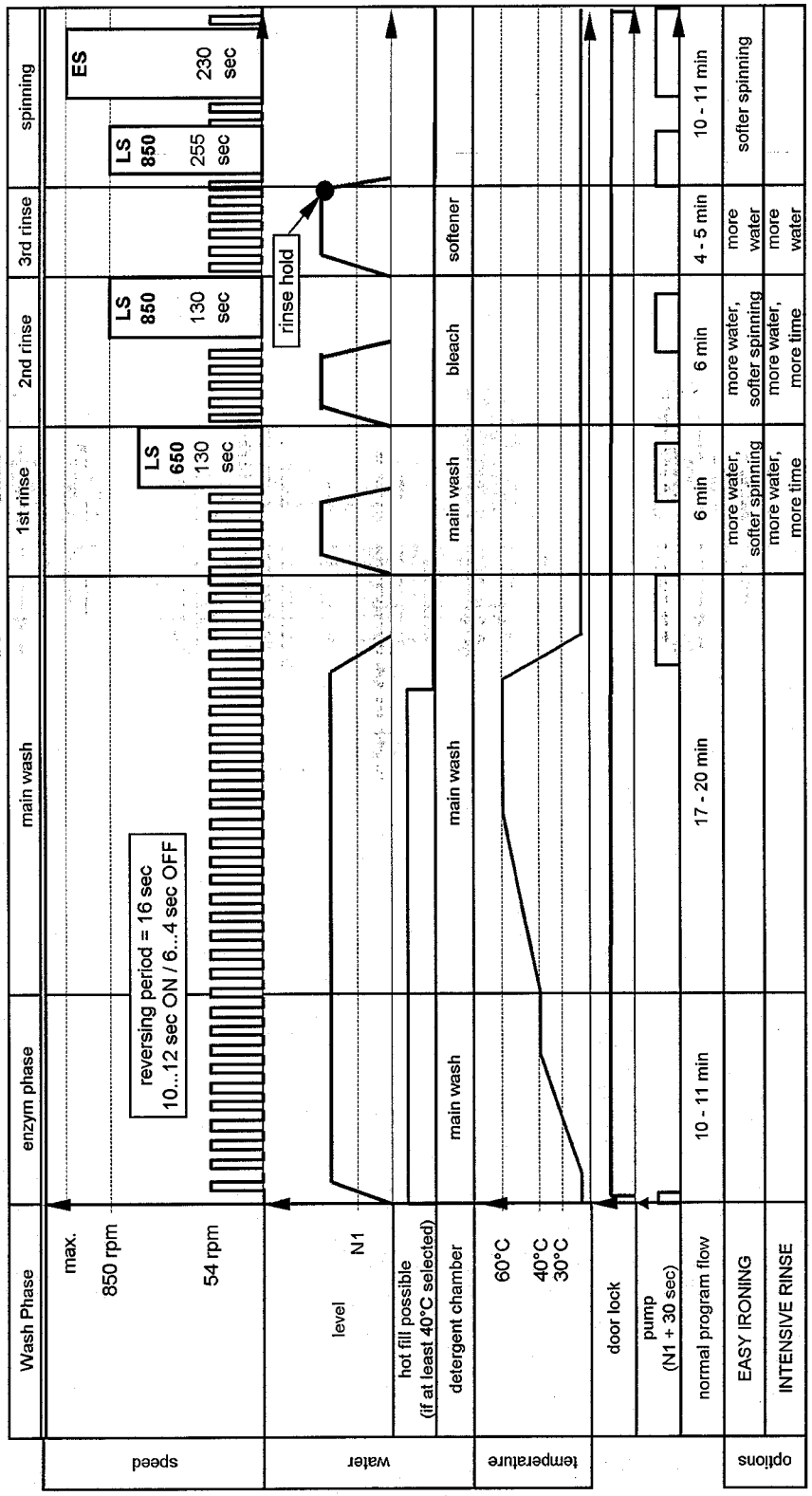


Program chart

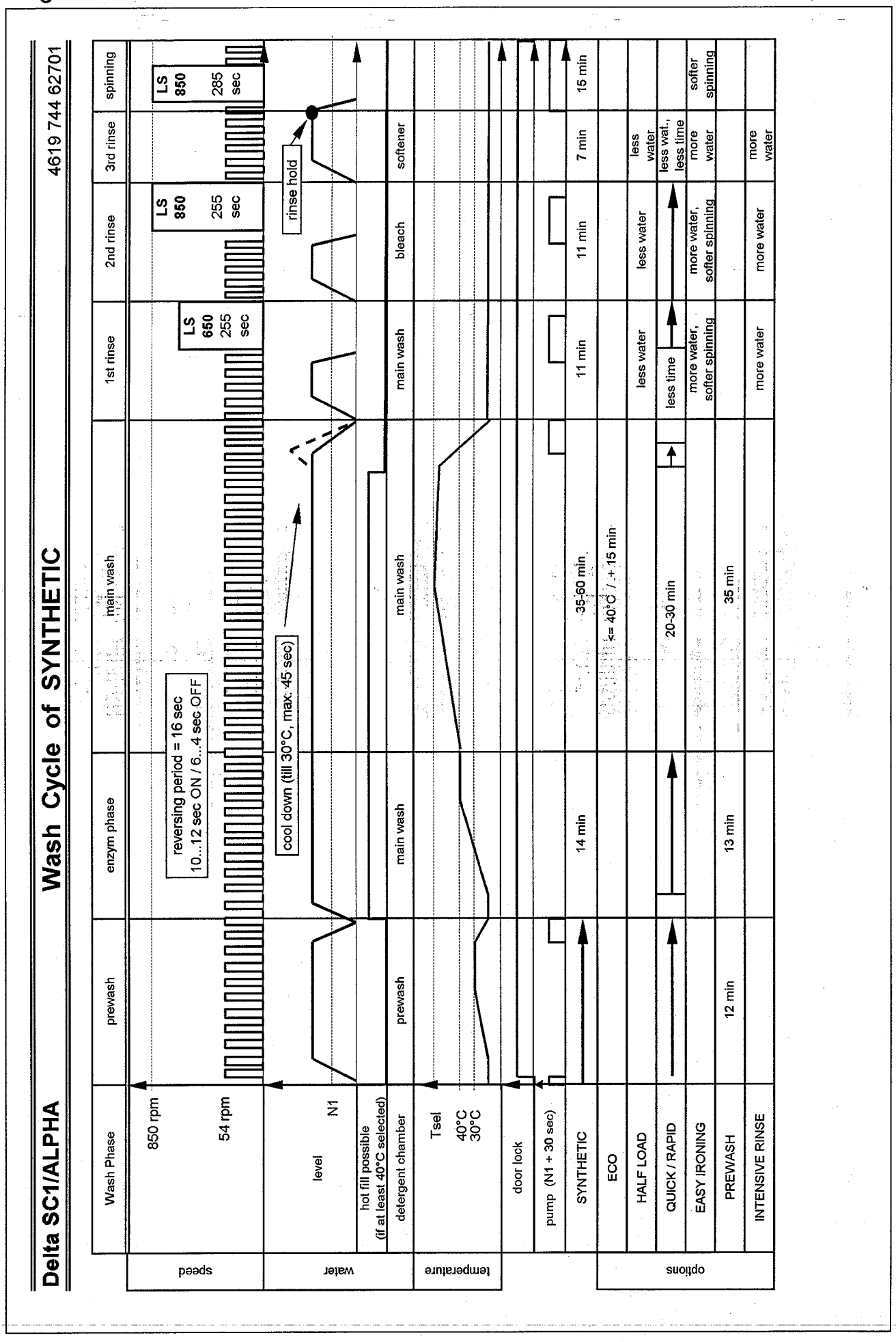


Program chart

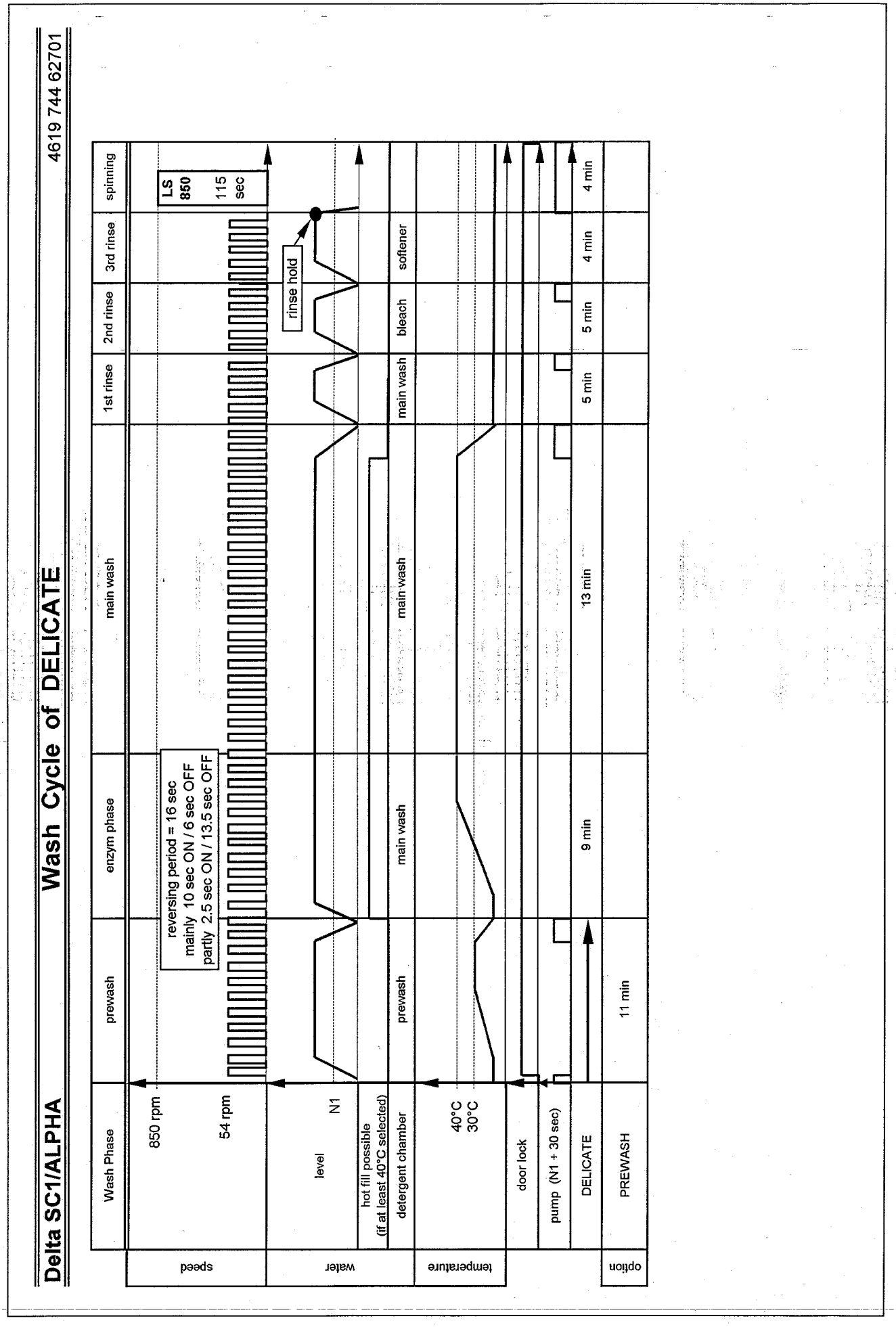
Delta SC1/ALPHA **Wash Cycle of CHRONO/DAILY** 4619 744 62701



Program chart

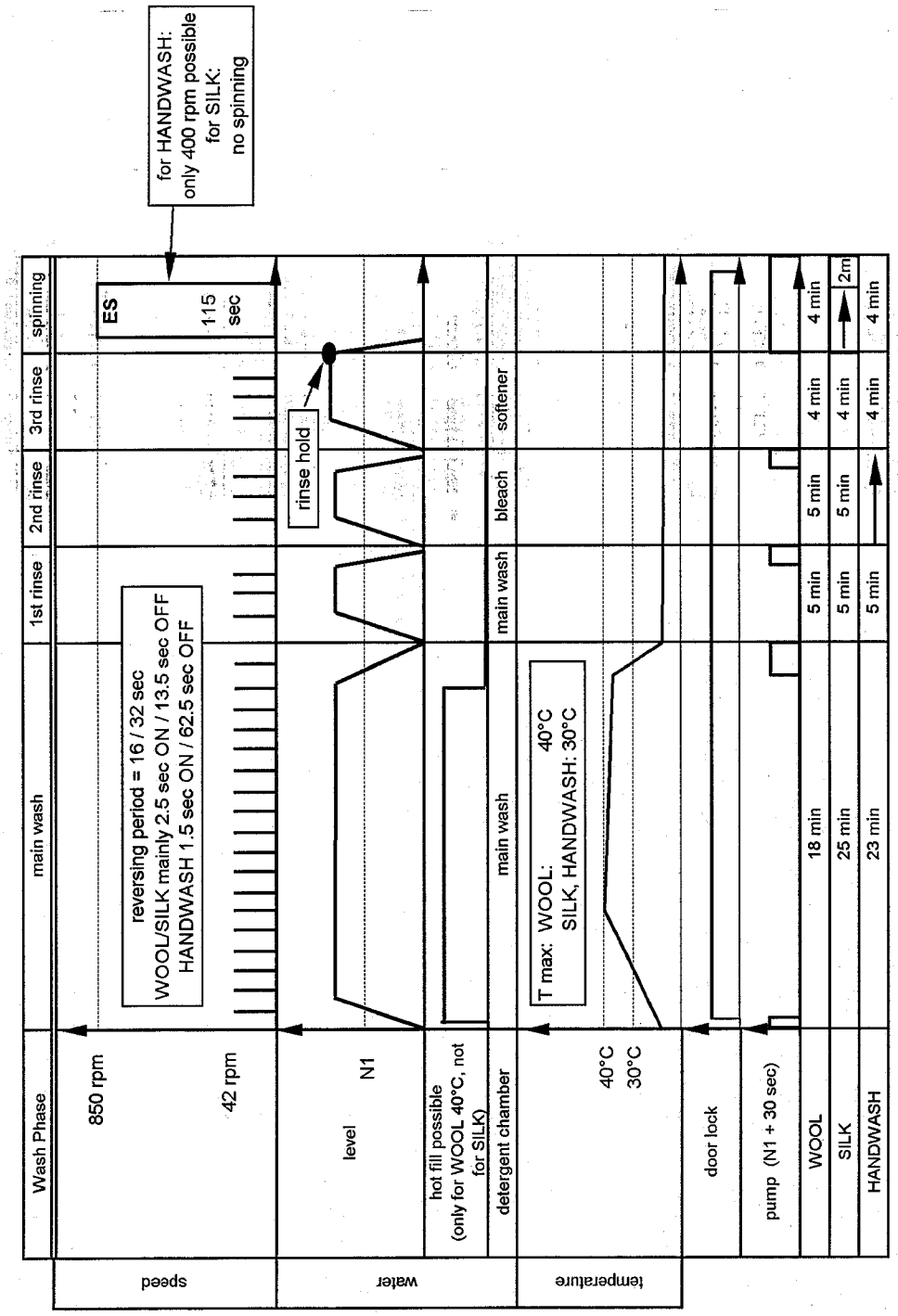


Program chart



Program chart

Delta SC1/ALPHA Wash Cycles of WOOL, SILK and HANDWASH 4619 744 62701

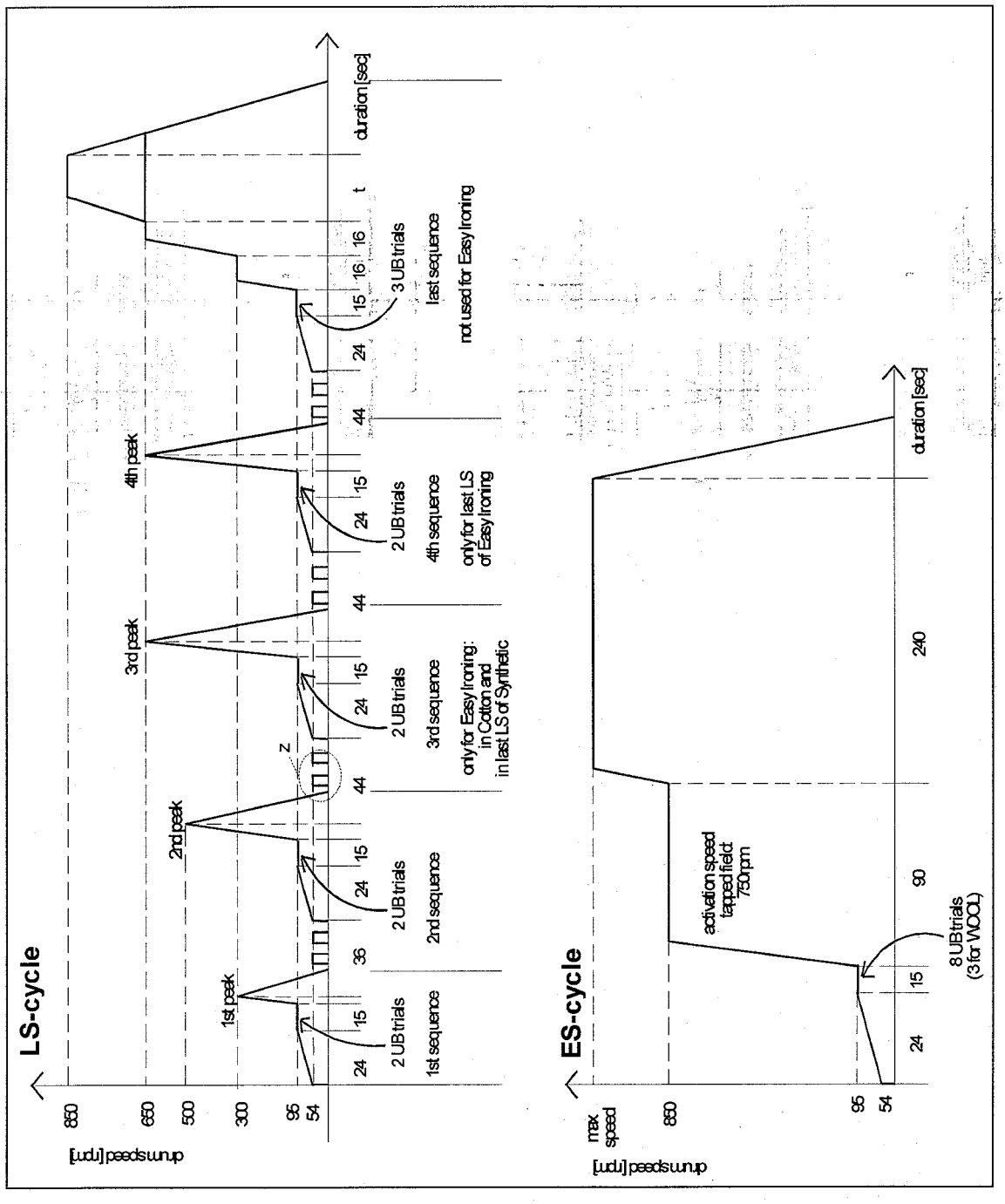


Program chart

Delta SC1/ALPHA

Spinning Profiles

4619 744 62701



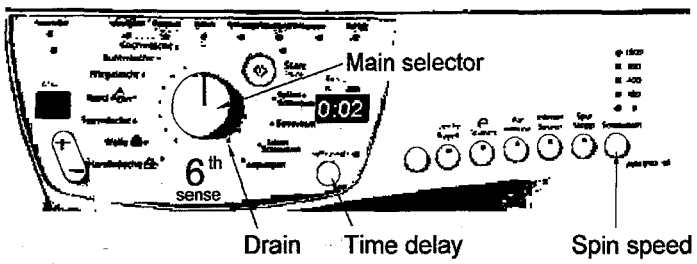
Text/Legend

Whirlpool SC1 VBL Version A and B test flow

1. Attention : Use test program without laundry !!

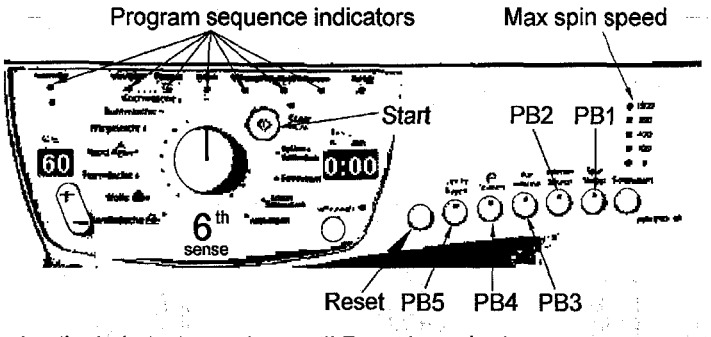
2. Selecting the program :

Select the Drain program by turning the main selector. Wait until the display shows 0:02 and till the pump has stopped



3. Start of test program :

Press PB1 twice, then PB2 twice and then the start button.



Indication of entering the test program:
- temperature display = 60°C
- start delay LED = ON
- speed LED max = ON
- LED of PB1 and PB2 = ON

if available:
- LED aquastop = ON
- LED water tap = ON
- LED pump filter = ON
- LED door lock = ON

during the hole testprocedure until Reset is pushed.

4. Stopping the test program :

Stop by moving the main selector into any other position.
- **note** - no stop of test program by main interruption.

Testprogram for Whirlpool SC 1 timer VBL version A or B (Central program selector).

Position of timer	Program sequence LED's: Pre-wash	Main-wash	Rinse	Rinse hold	Spin-ning	Detergent box	Inlet / Outlet	Max temp.	Duration (" = sec) (' = min)	Movement of drum	Advance condition	Advance by option button (Press slowly 2 times)	Checking
-	X	X	X	X	X	-				no movement	↓	PB3	PB1, PB2
6	X	X	X	X	X	pre wash	fill		60"	no movement		PB3	PB3
8							(hot) fill	hot fill	60"	no movement		PB4 **, PB1	PB4, mainwash fill, hot fill N1
16		X	X	X	X	main wash	*fill*		6'	*gentle wash*	N1		
18							fill			gentle wash	60"	PB1	
20							*(fill)*	*90°C*	*55'*	*gentle wash*	till 90°C - time unknown	PB1	heating, NTC leakage
23			X	X	X	bleach *				turns right	3"		
							fill			*turns right*	60"	PB5 ** or PB1	PB5, bleach fill
27						softener	fill			turns left	60"	PB1	softener fill
28				X	X	-	pump		6'	gentle wash	N1	PB1	pump, N1
29					X	-	pump			0 - 95 rpm	4", N1		pump
						-	pump			select. Speed	300", N1	PB1	motor - spinning
5						-			-	*no movement*	∞		

** if PB4 / PB5 are present they must be used to advance to next step - if not present - use PB1 instead.

* 4 chamber detergent dispenser "bleach compartment"
3 chamber detergent dispenser "main wash" compartment

Reaction to failure:

Timer SC1 goes into safety routine
- drain to level 1+30 sec. (time out for draining = 6 minutes)
- stop motor (relais in safety position)
- stop valve
- go out of heating step, if time out is reached
- Start is flashing

4619 712 54471-EBL

Text/Legend

Table of failures:

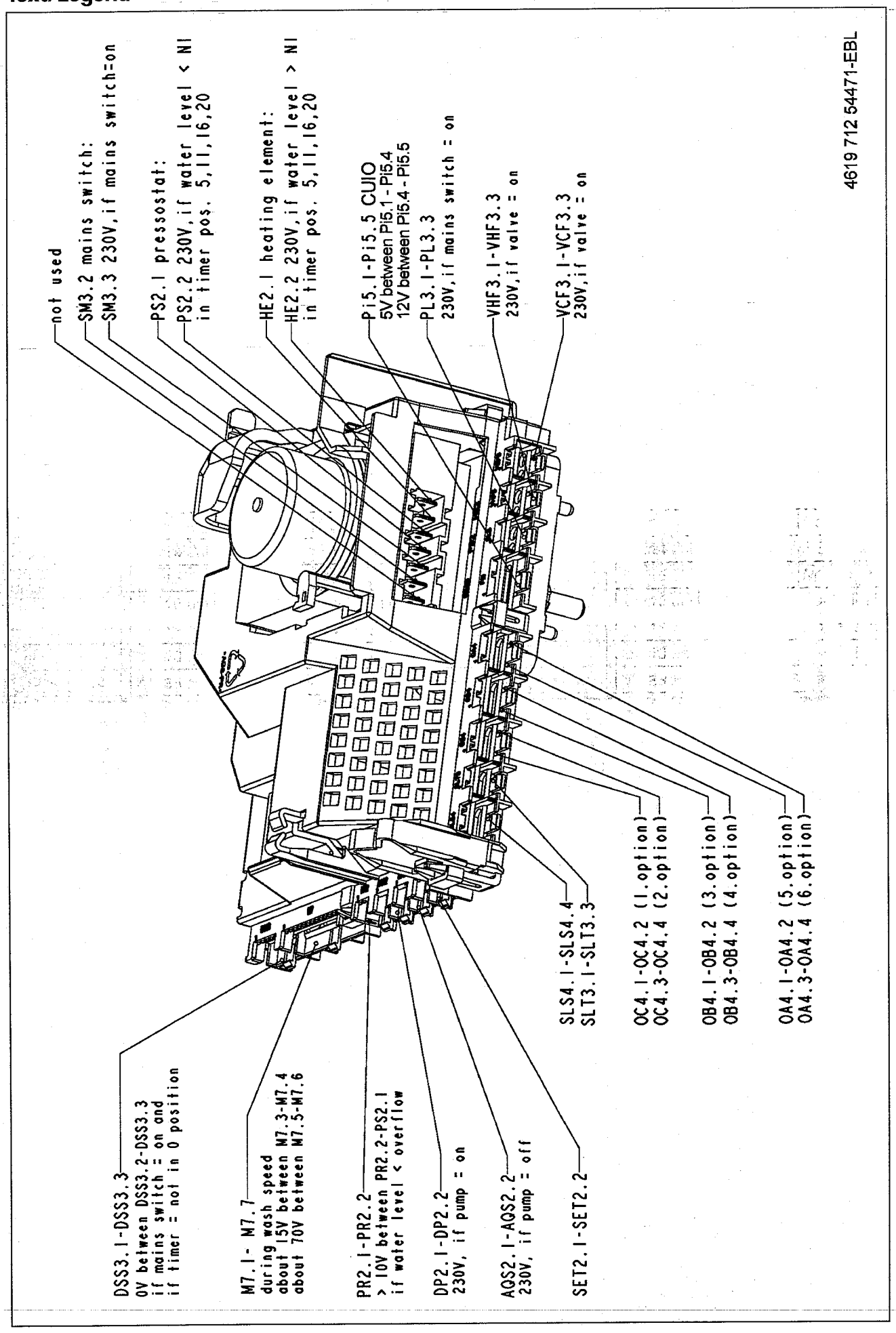
Failure Identifier	Indication	Detected failure	To be checked
0	F00	Pump triac failure	Control unit
1	FH	No water inlet	Water Tap / Valve / Flowmeter / Pressostat
2	FA	Aquastop failure	Aquastop switch
3	FP	Drain failure	Drain pump / Pressostat
4		***Not active***	
5	F05	NTC failure (SC / OC)	NTC
6	F06	Tachometer failure (no motor movement detected)	Motor / Tachometer
7	F07	Triac short circuit detection	Control unit, Motor
8		***Not active***	
9	F09	Overflow failure	Pressostat
10		***Not active***	
11	F11	Communication failure	Control unit, I2C bus
12		***Not active***	
13		***Not active***	
14	F14	EEPROM failure	Control unit
15		***Not active***	
16	F16	Control failure	Control unit
17		***Not active***	
18	F18	Control failure	Control unit
19	F19	Mains power failure	Power
20	F20	Control failure	Control unit
21	F21	Control failure	Control unit

Display of failures on the speed leds (flashing):

Errors	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	F:00	F:H	F:A	F:P	F:4	F:5	F:6	F:7	F:8	F:9	F:10	F:11	F:12	F:13	F:14	F:15
Speed Leds	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	○	○	○	○	○	○	○	○	○	●	○	●	○	○	●	○
	○	○	○	○	○	●	●	●	○	○	○	○	○	○	●	○
	○	○	●	●	○	○	●	●	○	○	○	●	○	○	●	○
	○	●	○	●	○	●	○	●	○	●	○	●	○	○	○	○

Errors	16	17	18	19	20	21
	F:16	F:17	F:18	F:19	F:20	F:21
Speed Leds	●	○	●	●	●	●
	○	○	○	○	○	○
	○	○	○	○	●	●
	○	○	●	●	○	○
	○	○	○	●	○	●

Text/Legend


not used
SM3.2 mains switch:
SM3.3 230V, if mains switch=on
PS2.1 pressostat:
PS2.2 230V, if water level < NI
in timer pos. 5,11,16,20
HE2.1 heating element:
HE2.2 230V, if water level > NI
in timer pos. 5,11,16,20
Pi5.1-Pi5.5 CUIO
5V between Pi5.1 - Pi5.4
12V between Pi5.4 - Pi5.5
PL3.1-PL3.3
230V, if mains switch = on
VHF3.1-VHF3.3
230V, if valve = on
VCF3.1-VCF3.3
230V, if valve = on
4619 712 54471-EBL
DSS3.1-DSS3.3
0V between DSS3.2-DSS3.3
if mains switch = on and
if timer = not in 0 position
M7.1- M7.7
during wash speed
about 15V between M7.3-M7.4
about 70V between M7.5-M7.6
PR2.1-PR2.2
> 10V between PR2.2-PS2.1
if water level < overflow
DP2.1-DP2.2
230V, if pump = on
AQS2.1-AQS2.2
230V, if pump = off
SET2.1-SET2.2
SLS4.1-SLS4.4
SLT3.1-SLT3.3
OC4.1-OC4.2 (1.option)
OC4.3-OC4.4 (2.option)
OB4.1-OB4.2 (3.option)
OB4.3-OB4.4 (4.option)
OA4.1-OA4.2 (5.option)
OA4.3-OA4.4 (6.option)